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FLOOD INSURANCE STUDY



CITY OF RIVERDALE,
UTAH
WEBER COUNTY



REVISED: SEPTEMBER 6, 1995



Federal Emergency Management Agency

COMMUNITY NUMBER - 490190

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 9.0.

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FLOOD INSURANCE STUDY

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study investigates the existence and severity of flood hazards in the City of Riverdale, Weber County, Utah, and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study will be used to convert Riverdale to the regular program of flood insurance by the Federal Emergency Management Agency. Local and regional planners will use this study in their efforts to promote sound flood plain management.

In some states or communities, flood plain management criteria or regulations may exist that are more restrictive or comprehensive than those on which these federally supported studies are based. These criteria take precedence over the minimum Federal criteria for purposes of regulating development in the flood plain, as set forth in the Code of Federal Regulations at 24 CFR, 1910.1(d). In such cases, however, it shall be understood that the State (or other jurisdictional agency) shall be able to explain these requirements and criteria.

1.2 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by Gingery Associates, Inc., for the Federal Emergency Management Agency, under Contract No. H-4790. This work, which was completed in July 1980, covered all significant flooding sources affecting Riverdale.

1.3 Coordination

Streams requiring detailed study were identified at a meeting attended by representatives of the study contractor, the Federal Emergency Management Agency, and the City of Riverdale on April 24, 1978. Results of the hydrologic analyses were presented to the Utah Department of Natural Resources, which is the State coordinator for Utah.

During the course of the study, hydrologic procedures, flood elevations, flood boundaries, and floodway delineation were reviewed with officials of the Utah Department of Natural Resources and the Federal Emergency Management Agency.

The results of this study were reviewed at a final community coordination meeting held on March 11, 1981, and attended by representatives of the Federal Emergency Management Agency, the study contractor, and the city. No problems were raised at the meeting.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated areas of the City of Riverdale, Weber County, Utah. The area of study is shown on the Vicinity Map (Figure 1). Hill Air Force Base is not included in this study.

Floods caused by overflow of Weber River and Burch Creek through Riverdale were studied in detail. The lengths of these studied stream segments are 2.4 miles and 0.4 mile, respectively.

Those areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1985.

2.2 Community Description

The City of Riverdale is located in south-central Weber County, in north-central Utah. Riverdale is bordered to the north and east by the Cities of Ogden and South Ogden, Utah, respectively, and to the west by the City of Roy, Utah. Unincorporated Davis County, Utah, land borders Riverdale to the south. The corporate limits of Riverdale encompass an area of approximately 3700 acres. The population of Riverdale was estimated at 5513 in 1977 and projected to be 9000 in 1995 (Reference 1). Most development in the community is taking place along Interstate Highways 80N and 15 and other major roads. There is little development on the flood plains.

The study area has a temperate, semiarid climate characterized by four well-defined seasons having warm, dry summers and cold, but usually not severe, winters. The average temperature in Riverdale is 51.4°F and annual precipitation totals 17 inches (Reference 2). The changes in topography in the area are often dramatic with the high mountain peaks dropping to the low terraces and lake plains. Flows in the area generally begin in the mountain basins and flow westerly in steep canyons cut through the front range of peaks toward the urbanizing lake plain. The native vegetation consists mainly of grasses (salt grass and wiregrass) on the low terraces and changes to small bushes and shrubs (sagebrush and brushy oak) on the higher terraces up to an elevation of approximately 7500 feet. Above that elevation, alpine forest of aspen, fir, pine, and spruce is dominant.

Weber River flows northerly through Riverdale with an average slope of 25 feet per mile. It has a width of approximately 100 feet and its depth is approximately 12 feet. At Riverdale, Weber River drains an area of approximately 2000 square miles. Burch Creek flows westerly through Riverdale with an average slope of 75 feet per mile. At the canyon mouth, it has a drainage area of 2.5 square miles and drains a total area of 5.0 square miles at the downstream study limit.

3

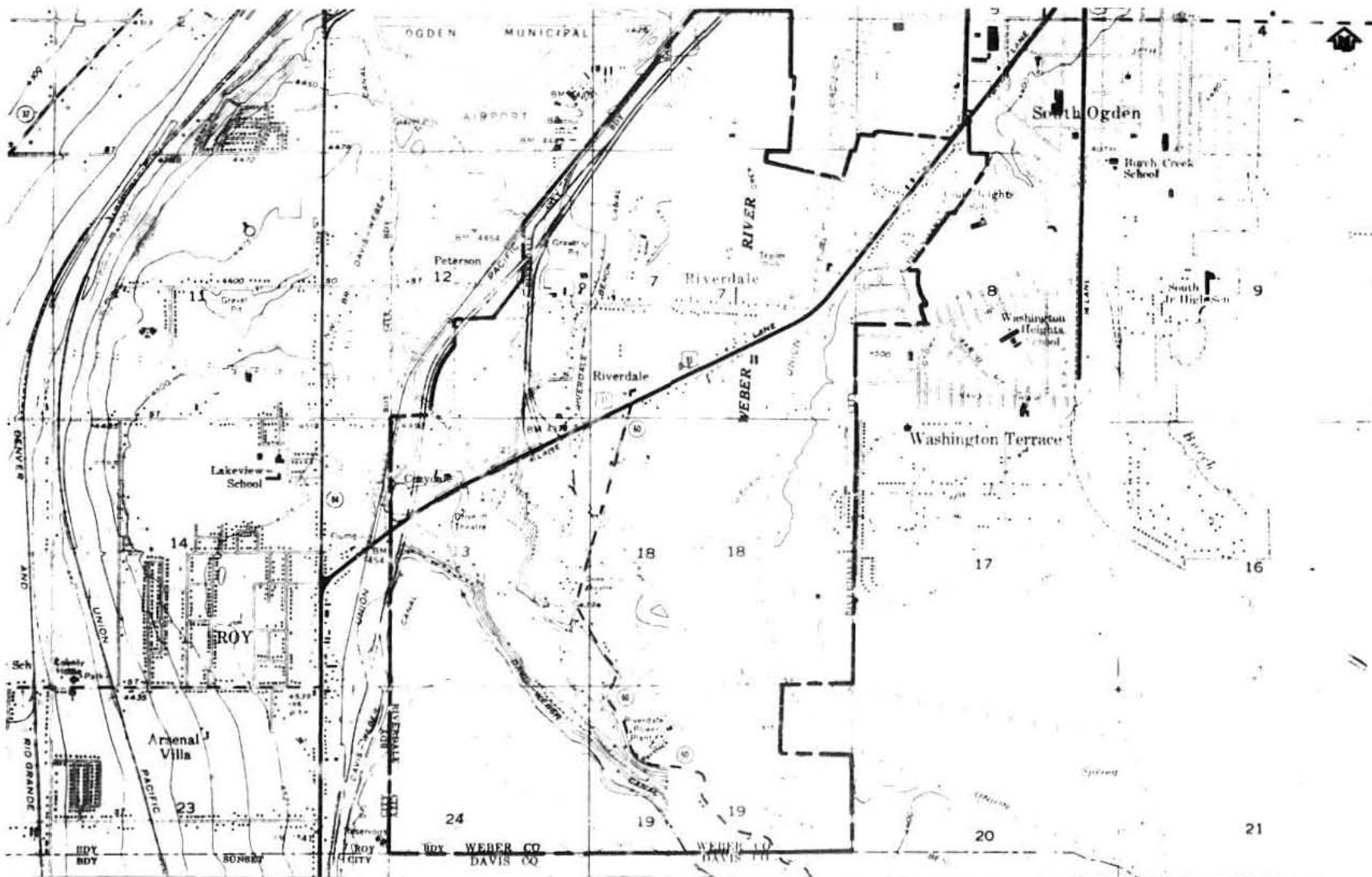


FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)

APPROXIMATE SCALE

2000 0 2000 4000 6000 FEET

VICINITY MAP

The primary underlying soils at Riverdale are of the Sunset-Kirkham-Martini Association. They are somewhat poorly drained to moderately well drained (Reference 3).

2.3 Principal Flood Problems

The primary cause of flooding on Weber River is rapidly melting snow from late April to early July. Snowmelt floods are characterized by large volume runoff, moderately high peak flows, and marked diurnal fluctuation in flow. Convective-type cloudburst storms can be expected during the summer months, but runoff from such storms does not constitute a flood hazard for Weber River through Riverdale (Reference 4). The largest recorded snowmelt floods on Weber River occurred in 1896, 1907, 1909, 1920, 1922, and 1952 (Reference 5). Peak flows for these and other major floods are shown in the following list. Recurrence intervals for these floods on Weber River are not available.

Year of Flood	Discharge (Cubic Feet per Second)
1893	7300 ¹
1896	8000 ¹
1907	8900 ²
1909	9500 ¹
1920	9000 ¹
1922	6700 ¹
1952	7600 ¹
1975	3800 ¹

¹At the "Weber River at Gateway" Stream Gage

²At the "Weber River Near Plain City" Stream Gage

Floods on Burch Creek are caused by melting snow or severe thunderstorms centered over the drainage basin, the summer thunderstorm floods being the more serious flood hazard (Reference 6). Newspaper accounts described flooding in May 1964 and May 1967, but no discharges or damage estimates were given. No recurrence intervals are available for these floods.

2.4 Flood Protection Measures

Reservoirs of the Weber Basin Project, which were completed in the mid-1960s by the U.S. Bureau of Reclamation and operated by the Weber River Water Users Association, provided a combined flood-control reservation of approximately 320,000 acre-feet. The reservoirs afford a moderate degree of flood protection to the study area in the event of a 100- or 500-year flood (Reference 4).

High road fills on Burch Creek provide a significant area for storage ponding. This helps reduce the peak discharge during large flood events.

There is no flood plain management in Riverdale.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equalled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for flood plain management and for flood insurance premium rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equalled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual occurrence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported here reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for floods of the selected recurrence intervals for each flooding source studied in detail affecting the community.

For Weber River, the runoff gaging records for a period of 73 years (1905 through 1977) (Reference 5) were analyzed according to Bulletin 17A of the U.S. Water Resources Council, Hydrology Committee (Reference 7).

The storage routing effect of upstream reservoirs was considered based on published reports by the U.S. Bureau of Reclamation and the U.S. Army Corps of Engineers (References 8 and 4). The detailed approach is documented with the Federal Insurance Administration in a report dated August 30, 1979 (Reference 9).

The detailed hydrologic analysis for Burch Creek is included in a hydrology report prepared in October 1979 (Reference 10). The key features of the hydrologic approach are summarized in this study.

For any particular stream, the discharge-frequency relationships were developed for the snowmelt-caused floods, as well as for

th rainfall-caused floods. These two distributions were statistically combined to give a discharge-frequency curve for the combined snowmelt-rainfall event.

The runoff records of 16 gaging stations located within the general vicinity of the study area, with lengths of record ranging from 8 to 45 years, were searched for the yearly peak flows caused by snowmelt and the yearly peak flows caused by rainfall. Using the U.S. Water Resources Council Bulletin 17A (Reference 7) approach for each gaging station location, the 10-, 50-, 100-, and 500-year frequency discharges were developed separately for the snowmelt and the rainfall events. Utilizing the stepwise regression approach, the regression equations (a total of eight) were developed for all four frequencies and the two kinds of flood events. Only drainage area was found to be the key independent variable in the regression equations.

The regression equations representing the snowmelt flood events resulted in a good correlation coefficient, but the regression equations for the rainfall-caused floods provided poor correlation and were unacceptable. It was found necessary to use a watershed model to simulate rainfall-caused floods.

The Storm Water Management Model developed by the U.S. Environmental Protection Agency was used to simulate rainfall-caused floods (Reference 11). A total of 16 streams were simulated by the Storm Water Management Model to yield discharge hydrographs for 10-, 50-, and 100-year frequency storms. Using the stepwise regression approach, the regression equations were developed to predict the 10-, 50-, and 100-year frequency discharges at the canyon mouth and at a location downstream of the developed area. The 500-year frequency discharge is obtained by extrapolation of the 10-, 50-, and 100-year frequency discharges.

In the final evaluation, the discharge-frequency distribution curve for a stream due to snowmelt was determined from analysis of the gaging station records or the related regression equations. The discharge-frequency distribution curve for the rainfall events was evaluated from the results of the Storm Water Management Model simulation or the related regression equations. These two independent events were statistically combined to yield a discharge-frequency distribution for the combined event.

Peak discharge-drainage area relationships for Weber River and Burch Creek are shown in Table 1.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of the flooding sources studied in the community were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of these flooding sources.

Table 1. Summary of Discharges

<u>Flooding Source and Location</u>	<u>Drainage Area (Square Miles)</u>	<u>Peak Discharges (Cubic Feet per Second)</u>			
		<u>10-Year</u>	<u>50-Year</u>	<u>100-Year</u>	<u>500-Year</u>
Burch Creek					
At Union Pacific Railroad	5.0	260	390	450	600
At Washington Boulevard	4.8	225	320	365	475
Weber River					
Above Confluence With Ogden River	1,610	3,600	5,300	7,000	12,000

Cross section data for Weber River and Burch Creek were obtained from previous studies done by the U.S. Army Corps of Engineers (References 4 and 6), and supplemented by field-surveyed cross sections. All bridges, dams, and culverts were measured to obtain elevation data and structural geometry.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Roughness coefficients (Mannings "n") for Weber River were estimated by field inspection at each cross section. The channel roughness value was 0.030 and the overbank values ranged from 0.060 to 0.080. Burch Creek channel roughness value was 0.050 and the overbank values ranged from 0.060 to 0.070.

Starting water-surface elevations for Weber River and Burch Creek were determined by the slope-area method. Water-surface elevations of floods of the selected recurrence intervals were computed using the U.S. Army Corps of Engineers HEC-2 step-backwater computer program (Reference 12).

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown on the maps.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the profiles are, thus, considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

The National Flood Insurance Program encourages State and local governments to adopt sound flood plain management programs. Therefore, each Flood Insurance Study includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Emergency Management Agency as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate

additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using topographic maps at a scale of 1:24,000, with contour intervals of 40 and 10 feet, enlarged to 1:6,000 and 1:12,000 (Reference 13), and 1:1,200, with contour intervals of 4 and 2 feet (Reference 14).

Flood boundaries for the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2). In cases where the 100- and 500-year flood boundaries are close together, only the 100-year flood boundary has been shown. Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity, increases the flood heights of streams, and increases flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream plus any adjacent flood plain areas that must be kept free of encroachment in order that the 100-year flood may be carried without substantial increases in flood heights. Minimum standards of the Federal Emergency Management Agency limit such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this report are presented to local agencies as minimum standards that can be adopted or that can be used as a basis for additional studies.

The floodways presented in this study were computed on the basis of equal-conveyance reduction from each side of the flood plain. The results of these computations were tabulated at selected cross sections for each stream segment for which a floodway was computed (Table 2).

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway widths were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the boundaries of the floodway and the 100-year flood are either close together or collinear, only the floodway boundary has been shown.

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
(FEET NGVD)								
Burch Creek								
A	1,240	46	107	4.2	4,336.7	4,336.7	4,337.1	0.4
B	1,420	59	83	5.5	4,338.2	4,338.2	4,338.2	0.2
C	1,600	22	77	5.2	4,339.6	4,339.6	4,340.0	0.4
D	2,480	22	51	8.9	4,352.3	4,352.3	4,352.3	0.0
E	2,800	24	102	4.4	4,358.1	4,358.1	4,358.1	0.0
F	2,930	24	111	4.1	4,358.7	4,358.7	4,358.8	0.1
G	3,070	98	406	1.0	4,370.2	4,370.2	4,370.6	0.4
H	3,130	70	221	2.0	4,370.2	4,370.2	4,370.6	0.4

¹Feet Above Confluence With Weber River

T
A
B
L
E

2

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)

FLOODWAY DATA

BURCH CREEK

10

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE ¹	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
(FEET NGVD)								
Weber River								
A	82,000	141	981	7.1	4,327.3	4,327.3	4,327.3	0.0
B	82,850	144	1,058	6.6	4,330.4	4,330.4	4,330.9	0.5
C	83,835	355	1,157	6.0	4,334.4	4,334.4	4,335.4	1.0
D	85,015	514	2,709	2.6	4,339.0	4,339.0	4,340.0	1.0
E	86,285	111	904	7.7	4,343.3	4,343.3	4,343.7	0.4
F	86,375	108	779	9.0	4,343.9	4,343.9	4,344.2	0.3
G	87,450	103	1,151	6.1	4,350.0	4,350.0	4,350.0	0.0
H	87,820	115	785	8.9	4,351.0	4,351.0	4,351.0	0.0
I	87,890	150	1,360	5.1	4,351.3	4,351.3	4,352.1	0.8
J	88,250	200	1,438	4.9	4,352.2	4,352.2	4,352.8	0.6
K	88,790	95	996	7.0	4,353.7	4,353.7	4,354.3	0.6
L	88,890	405	1,256	5.6	4,354.4	4,354.4	4,355.3	0.9
M	89,040	200	1,454	4.8	4,355.2	4,355.2	4,356.0	0.8
N	90,050	208	1,458	4.8	4,357.9	4,357.9	4,358.5	0.6
O	90,850	152	1,406	5.0	4,359.7	4,359.7	4,360.7	1.0
P	91,660	211	1,448	4.8	4,362.4	4,362.4	4,362.8	0.4
Q	92,560	225	1,556	4.5	4,365.0	4,365.0	4,365.3	0.3
R	93,320	156	1,186	5.9	4,367.5	4,367.5	4,367.6	0.1
S	93,935	183	1,483	4.7	4,369.6	4,369.6	4,369.6	0.0
T	94,500	106	985	7.1	4,371.1	4,371.1	4,371.3	0.2
U	94,570	70	472	14.8	4,371.1	4,371.1	4,371.6	0.5
V	95,345	290	1,371	5.1	4,378.4	4,378.4	4,379.2	0.8
W	95,430	335	657	10.7	4,378.4	4,378.4	4,378.7	0.3
X	95,980	190	1,316	5.3	4,383.3	4,383.3	4,383.4	0.1
Y	97,000	290	2,165	3.2	4,385.5	4,385.5	4,385.6	0.1
Z	98,030	220	1,150	6.1	4,387.8	4,387.8	4,387.9	0.1

¹Distance in Feet Above Southern Pacific Railroad Bridge

NOTE: The 100-year flood elevations do not tie into the adjacent communities due to degradation effects.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

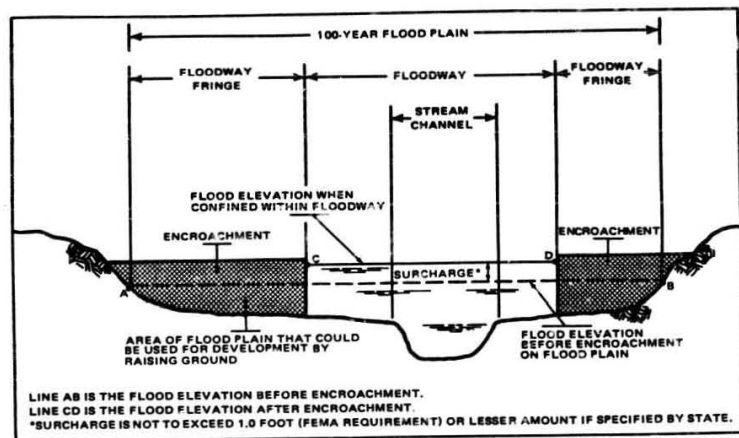


Figure 2. Floodway Schematic

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the Federal Emergency Management Agency has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors (FHF's), and flood insurance zone designations for each flooding source studied in detail affecting Riverdale.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-Year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the flooding sources of Riverdale are shown on the Flood Profiles (Exhibit 1) and summarized in Table 3.

5.2 Flood Hazard Factors

The FHF is the Federal Emergency Management Agency device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based on FHF's from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

5.3 Flood Insurance Zones

After the determination of reaches and their respective FHF's, the entire incorporated area of Riverdale was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

FLOODING SOURCE	PANEL ¹	ELEVATION DIFFERENCE ² BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION ³ (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Burch Creek Reach 1	0001	-1.2	-0.4	0.7	010	A2	Varies - See Map
Weber River Reach 1	0001	-2.0	-0.9	2.0	020	A4	Varies - See Map
Reach 2	0001	-1.7	-0.7	1.6	015	A3	Varies - See Map

¹ Flood Insurance Rate Map Panel

² Weighted Average

³ Rounded to Nearest Foot

TABLE 3

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)

FLOOD INSURANCE ZONE DATA

BURCH CREEK-WEBER RIVER

- Zones A2, A3, and A4: Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to PHFs.
- Zone B: Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
- Zone C: Areas of minimal flooding.

The flood elevation differences, PHFs, flood insurance zones, and base flood elevations for the flooding sources studied in detail in the community are summarized in Table 3.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for Riverdale is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Emergency Management Agency.

6.0 OTHER STUDIES

Weber River was included in the U.S. Army Corps of Engineers Flood Hazard Information report (Reference 4). Also, Burch Creek is included in a Flood Plain Information report done by the U.S. Army Corps of Engineers (Reference 6). Differences in the flood plain and the flood profiles between this Flood Insurance Study and the U.S. Army Corps of Engineers reports are attributed to updated hydrologic information (Reference 11) and topographic changes.

Flood Insurance Studies are being developed for the City of South Ogden and the unincorporated areas of Weber County, Utah (References 15 and 16). The results of these adjoining studies are in exact agreement with this study. This study supersedes the Flood Hazard Boundary Map for Riverdale, Utah (Reference 17).

This study is authoritative for the purposes of the National Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

7.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA, Mitigation Division, Denver Federal Center, Building 710, Box 25267, Denver, Colorado 80225-0267.

8.0 BIBLIOGRAPHY AND REFERENCES

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12. U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles Computer Program 723-X6-L202A, Davis, California, Revised February 1977
 13. U.S. Department of the Interior, Geological Survey, 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Intervals 40 and 10 feet: Ogden, Utah (1955), Photorevised (1969)
 14. Olympus Aerial Surveys, Topographic Maps, Scale 1:1,200, Contour Intervals 4 and 2 feet: Weber River Parkway, Salt Lake City, Utah, March 19, 1974
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9.0 REVISION DESCRIPTIONS

This section has been added to provide information regarding significant revisions made since the original Flood Insurance Study was printed. Future revisions may be made that do not result in the republishing of the Flood Insurance Study report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood hazard data located at the Building and Zoning Department, City of Riverdale, 4600 South Weber River Drive, Riverdale, Utah 84405.

9.1 First Revision

This study was revised on September 6, 1995, to show the effects of an updated hydraulic analysis for the Weber River. The analysis for this revision was performed by Love and Associates, Inc., Boulder, Colorado, for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-90-C3132.

On June 3, 1992, an initial Consultation and Coordination Officer (CCO) meeting was held with representatives of FEMA, the State of Utah, the City of Riverdale, and the Study Contractor. This meeting was held to establish the study limits, as well as the hydrologic and hydraulic parameters for the study, and to identify available mapping. The final CCO meeting was held on August 17, 1994.

Approximately 3.0 miles of the Weber River was restudied, centered about the City of Riverdale city limits.

Peak discharges from the August 3, 1981, Flood Insurance Study (FIS) were used for this restudy.

Water-surface elevations for the restudied reach of the Weber River were determined using the COE HEC-2 computer program (Reference 12).

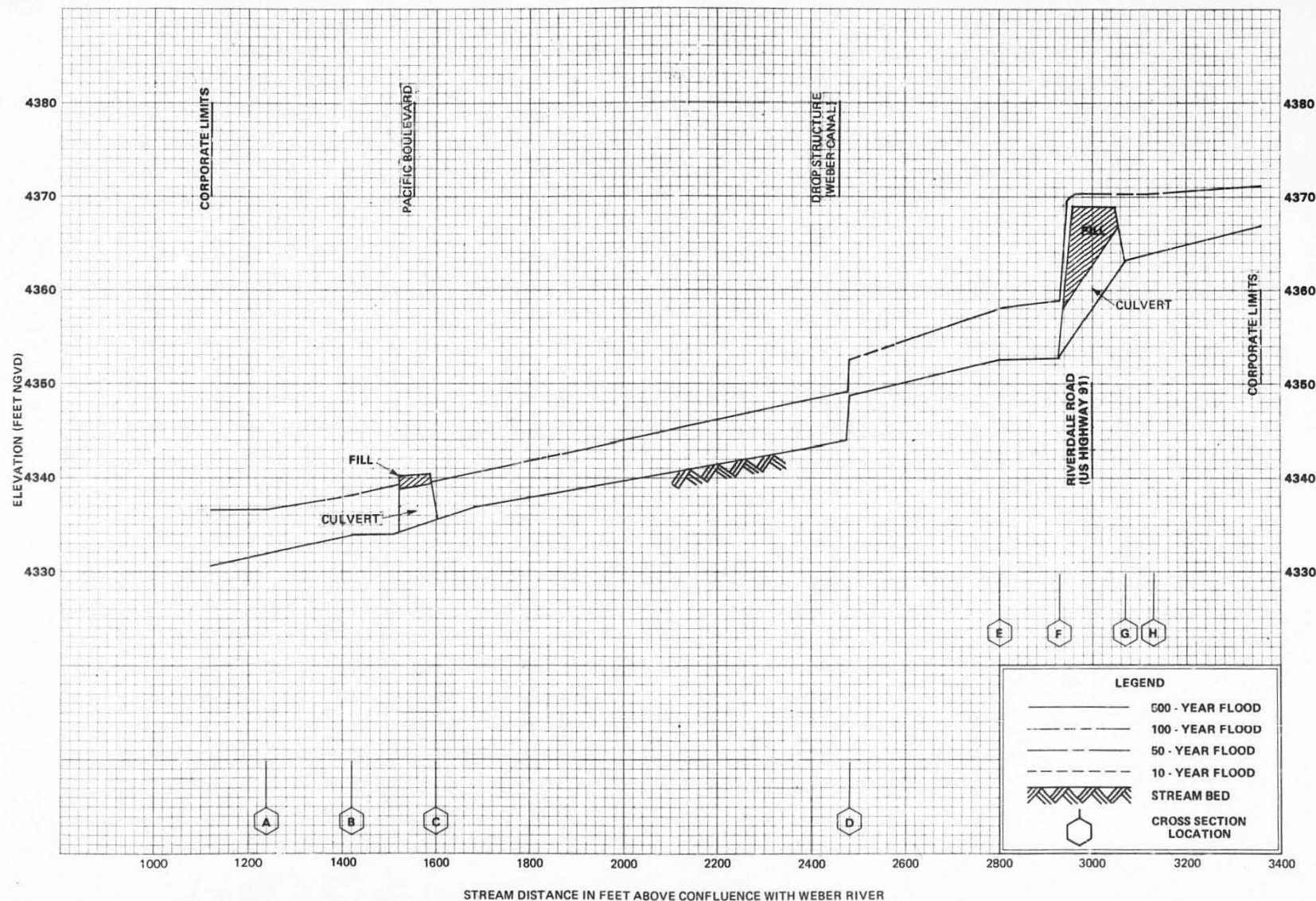
The starting water-surface elevation for the restudied reach of the Weber River was computed by the slope-area method.

The floodway was defined using Encroachment Method 4 and equal conveyance reduction; Encroachment Method 1 was then used at certain cross sections to obtain a smooth floodway boundary.

This restudy utilized updated topographic information that reflects changes resulting from degradation due to flooding and earthwork since the original FIS. Significant changes in the base (100-year) flood elevations (BFEs) and thalweg elevations were identified. Due to the significance of the changes in the BFE and thalweg elevations, a tie-in to adjacent communities was not possible.

Additional modifications to the floodplain boundaries along the east side of the Weber River from approximately 50 feet upstream of Riverdale Road to approximately 700 feet upstream of the road to the City Hall were made based on topographic data submitted by the city after the review period. These data were also utilized to revise the floodway boundaries along the east side of the Weber River from approximately 300 feet upstream to 600 feet upstream of the road to the City Hall complex.

These revisions are shown on FIRM Panel 0001 D, the only panel printed.



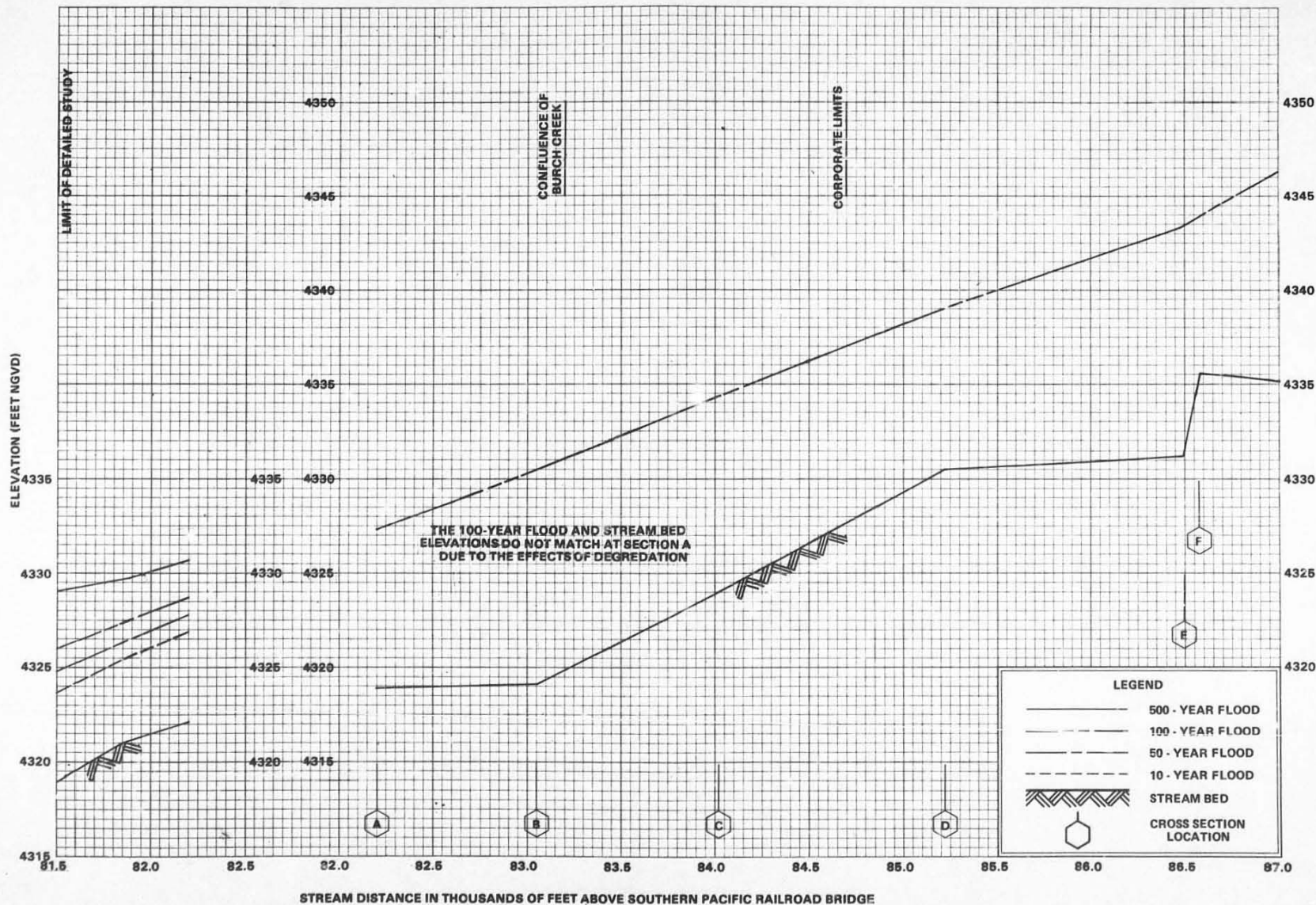
FLOOD PROFILES

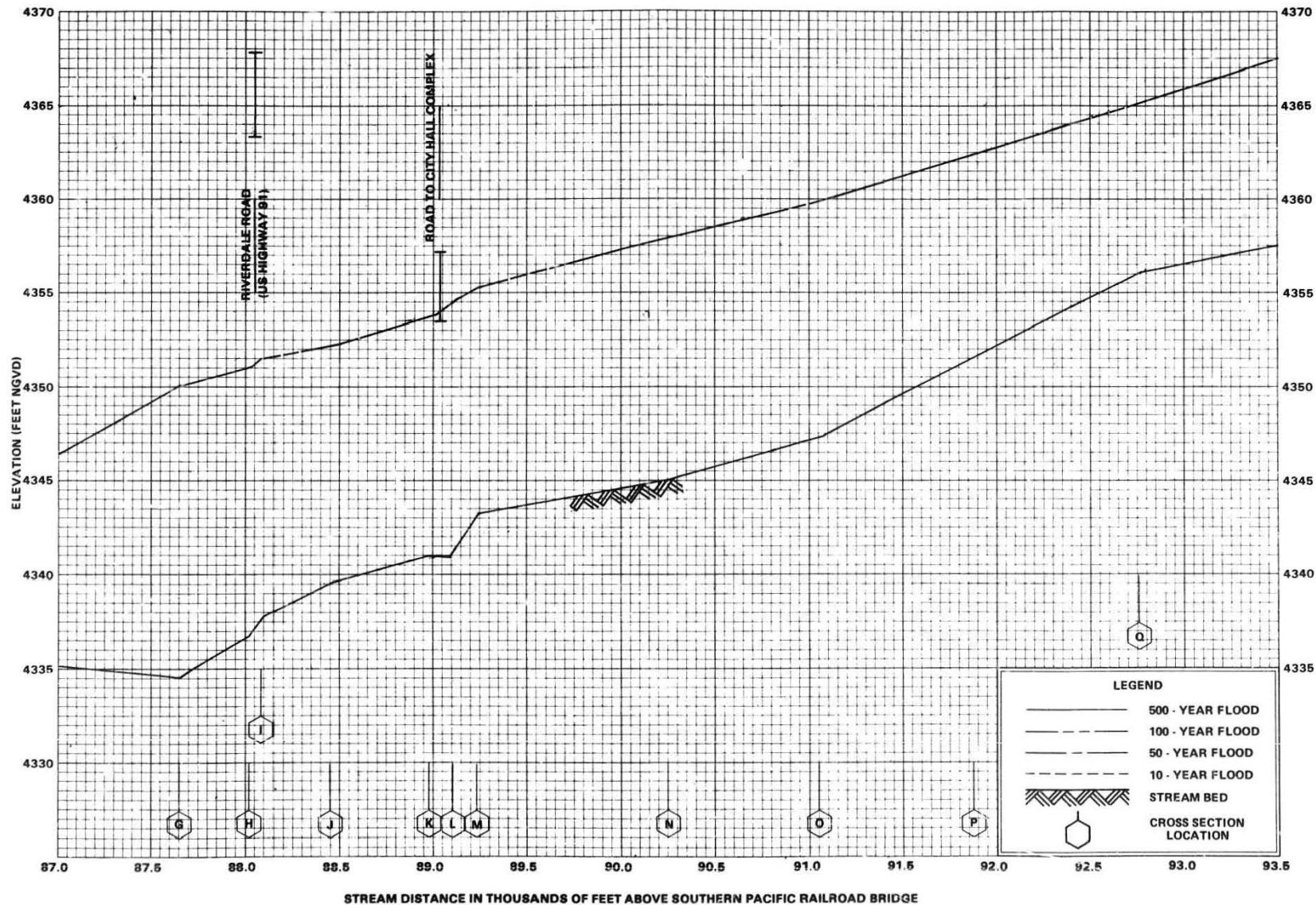
BURCH CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)

01P





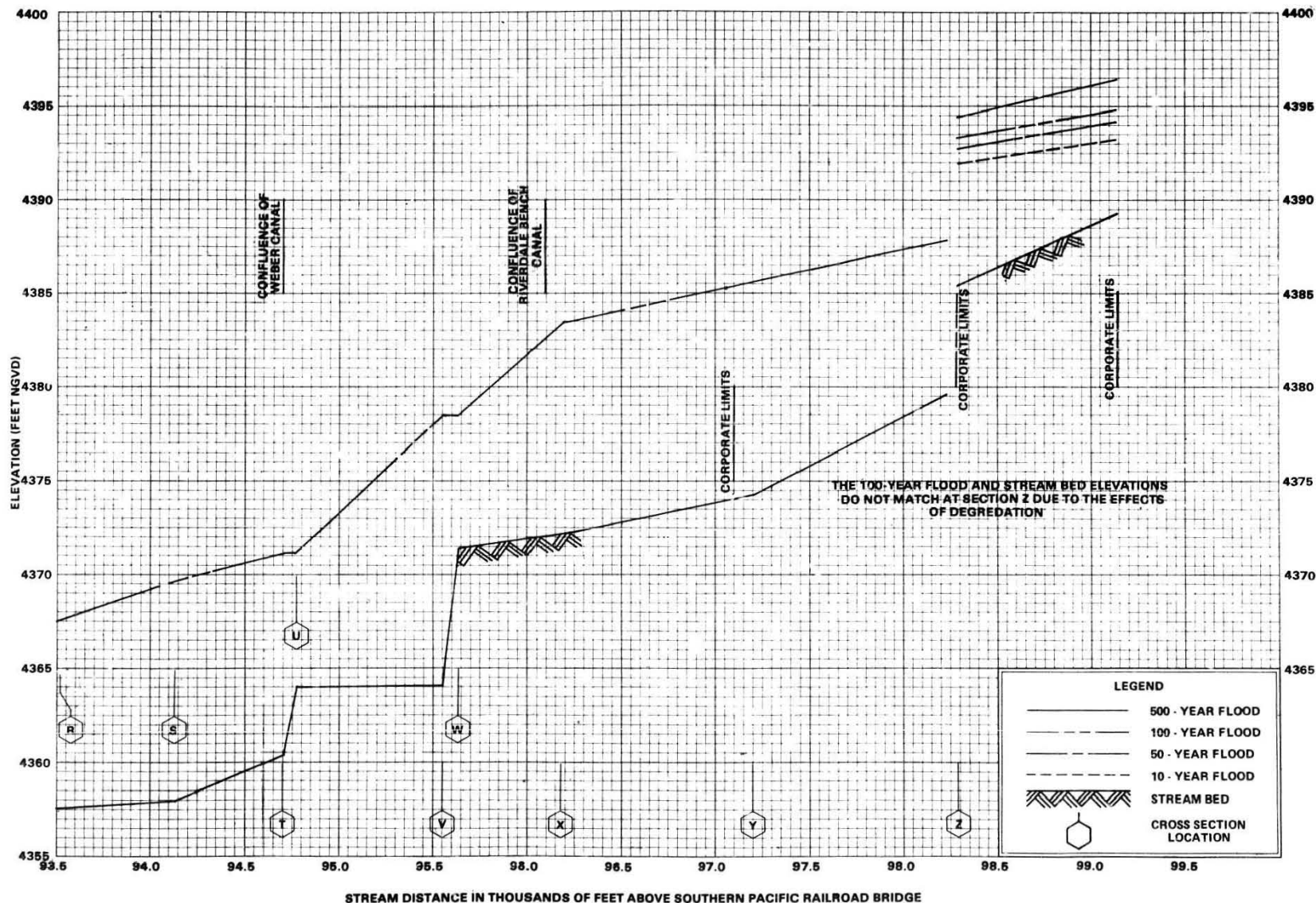
FLOOD PROFILES

WEBER RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)

03P



FLOOD PROFILES

WEBER RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

CITY OF RIVERDALE, UT
(WEBER CO.)